apsara
Date 28/9/25

Ex No: 11a)
Static Routing In
Cisco Packet Tracer

Aim:
To configure and verify Static routing in Cisco packet Tracer using main and backup route

Steps:

1. Open Packet Tracer:

- Drag and drop 3 routes
- Connect them with PCs and assign IP addresses to interfaces as per the given network

2. Identify Networks

- Router 0 (R0): 10.0.0.0/8
- Router 1 (R1): 20.0.0.0/8
- Router 2 (R2): 40.0.0.0/8

3) Configure Static routes on Router 0

enable
Configure terminal
ip route 30.0.0.0
ip route 30.0.0.0

ip route 50.0.0.0
exit
show ip route static

4) Configure Static routes on

enable
Configure terminal
ip route 10.0.0.0
ip route 10.0.0.0
ip route 40.0.0.0
exit
show ip route static

5) Configure Static routes on router

enable
Configure terminal
ip route 10.0.0.0
ip route 30.0.0.0
exit
show ip route static

6) Verify Routing

- Use ping to test connectivity between PCs in different network
- Use tracert to check the actual route taken

7. Test Back Route

- Disconnect the main link
- Try pinging again

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Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 10.0.0.0 255.0.0.0 20.0.0.1 10 main route
Router(config)#ip route 10.0.0.0 255.0.0.0 50.0.0.1 20 backup route
Router(config)#ip route 40.0.0.0 255.0.0.0 20.0.0.1 10 main route
Router(config)#ip route 40.0.0.0 255.0.0.0 50.0.0.1 20 backup route
Router(config)#exit
Router#show ip route static
S     10.0.0.0/8 [10/0] via 20.0.0.1
S     40.0.0.0/8 [10/0] via 20.0.0.1
```

Only main routes are added to the routing table.

```
Router#
```

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 30.0.0.0 255.0.0.0 20.0.0.2 10 Primary route
Router(config)#ip route 30.0.0.0 255.0.0.0 40.0.0.2 20 Backup route
Router(config)#ip route 30.0.0.100 255.255.255.255 40.0.0.2 10 Primary route
Router(config)#ip route 30.0.0.100 255.255.255.255 20.0.0.2 20 Backup route
Router(config)#ip route 50.0.0.0 255.0.0.0 40.0.0.2 10 Primary route
Router(config)#ip route 50.0.0.0 255.0.0.0 20.0.0.2 20 Backup route
Router(config)#exit
Router#show ip route static
     30.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S       30.0.0.0/8 [10/0] via 20.0.0.2
S       30.0.0.100/32 [10/0] via 40.0.0.2
S    50.0.0.0/8 [10/0] via 40.0.0.2
```

Router adds only primary routes to the routing table.

```
Router#
```

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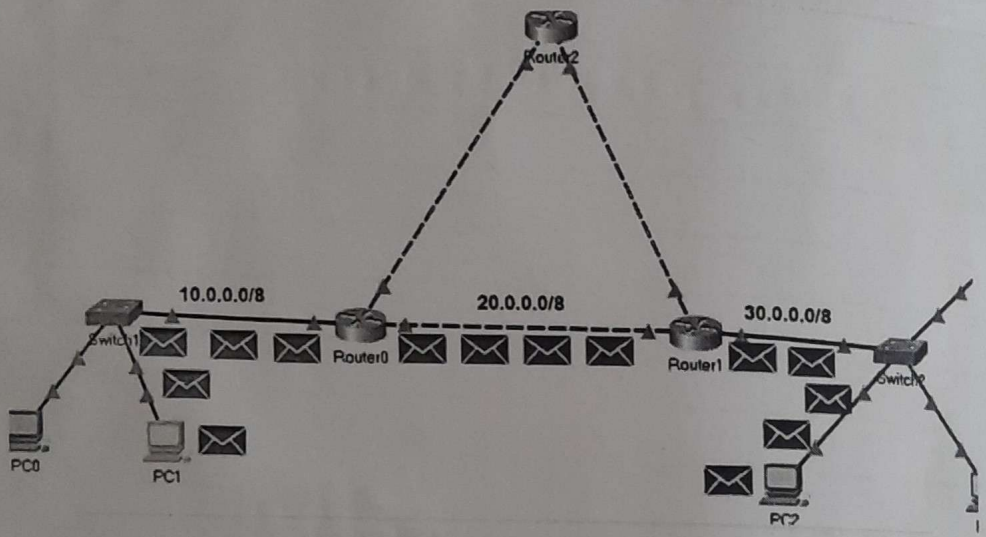
Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with
Router(config)#ip route 10.0.0.0 255.0.0.0 40.0.0.1
Router(config)#ip route 30.0.0.0 255.0.0.0 50.0.0.2
Router(config)#exit
Router#show ip route static
S    10.0.0.0/8 [1/0] via 40.0.0.1
S    30.0.0.0/8 [1/0] via 50.0.0.2

Router#
```



Result:

Static routing was successfully configured in packet tracer.

Exp No: 11(b)

RIP Routing in Cisco Packet Tracer

Aim:

To configure and verify RIP (Routing information Protocol) in Cisco Packet tracer

Steps:

- Network Setup
- Add 3 routers (R0, R1, R2) and 2 PCs (PC0, PC1)
- Connect them as per table

Device	Interface	IP address	Connection
PC0	FastEthernet	10.0.0.2/8	R0 Fa0/1
R0	Fa0/1	10.0.0.1/8	PC0
R0	50/0/0	192.168.1.240/30	R1 S0/0/0
R0	S0/0/0	192.168.1.254/30	R2 S0/0/0
R01	S0/0/0	192.168.1.246/30	R2 S0/0
R1	S0/0/1	192.168.1.246/30	R2 S0/0

2) Assign IP address:

enable

configure terminal
interface fastEthernet 0/1
ip address 10.0.0.1
no shutdown
exit

interface serial 0/0/0
ip address 192.168.1.249
clock rate 64000
bandwidth 64
no shutdown
exit

3) Enable RIP routing protocal

- Router 0

router rip
network 10.0.0.0
network 192.168.1.248
network 192.168.1.252

- Router 1

router rip
network 192.168.1.248
network 192.168.1.244

- Router 2

router rip
network 20.0.0.0

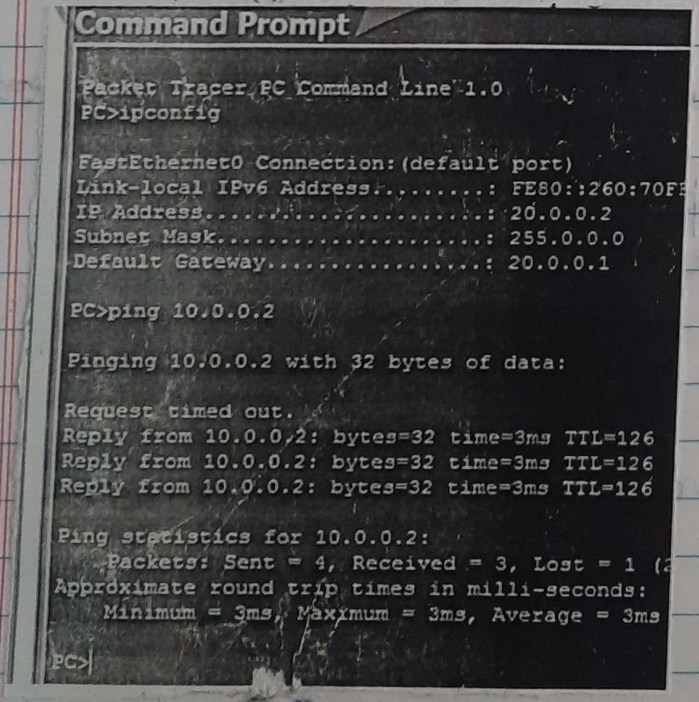
network 192.168.1.244
network 192.168.1.252

4) Verify Configuration:

- Use show ip route
- From PC0, ping 20.0.0.2 (PC1) to check connectivity
- Use tracert 20.0.0.2

5) Test Automatic Failover:

- By default, RIP selects the path with fewer hops.
- Disconnect the link R0–R2
- Use ping or tracert again



Result:

RIP routing was successfully configured.